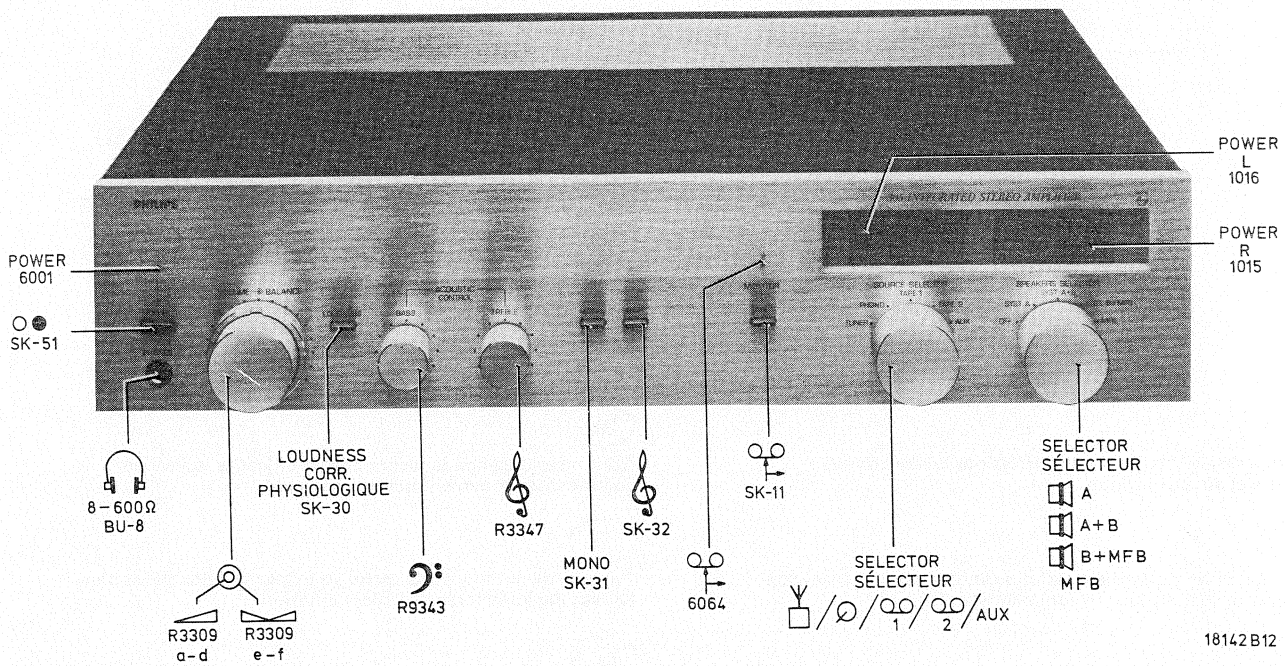
Service
Service
Service

Service Manual



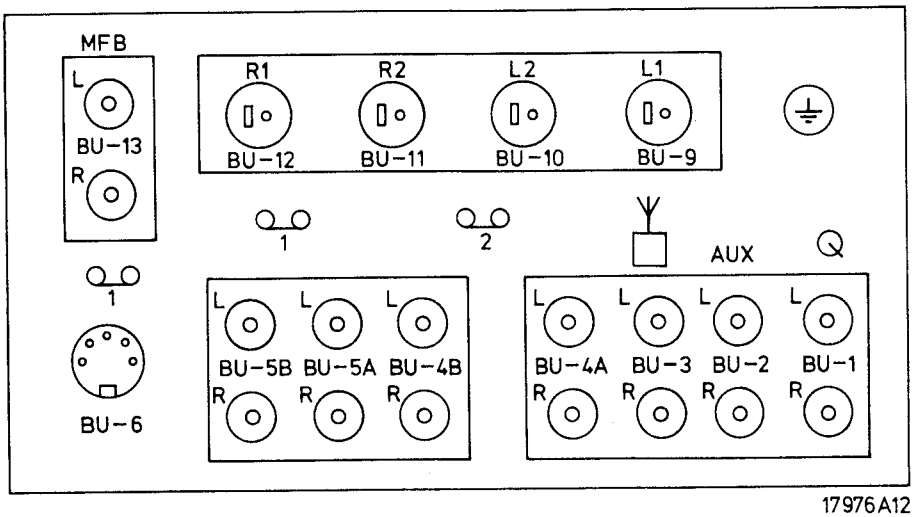
Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Serviço

Subject to modification

4822 725 13392

Printed in The Netherlands

PHILIPS



17976A12

BU-1	Q	2,5 mV	(47 kΩ)
BU-2	AUX	150 mV	(500 kΩ)
BU-3		150 mV	(500 kΩ)
BU-4A		150 mV	(100 kΩ)
BU-4B		150 mV	(2,5 kΩ)
BU-5A		150 mV	(2,5 kΩ)
BU-5B		150 mV	(100 kΩ)

BU-6		1,4	0,25 mV/kΩ	(220 kΩ)
		3,5	150 mV	(100 kΩ)
BU-8			350 mV	(8 Ω)
			2,5 V	(1 kΩ)
BU-9		L1	45 W	(8 Ω)
BU-10		L2		
BU-11		R2		
BU-12		R1	45 W	(8 Ω)
BU-13			2,5 V	(1 kΩ)

(GB)
For more detailed technical specifications please consult commercial documentation.

(F)
Pour l'obtention de données techniques plus détaillées veuillez consultez la documentation commerciale.

(I)
In modo da ottenere dati tecnici piu particolareggiati, vi preghiamo di riferirvi alla documentazione commerciale.

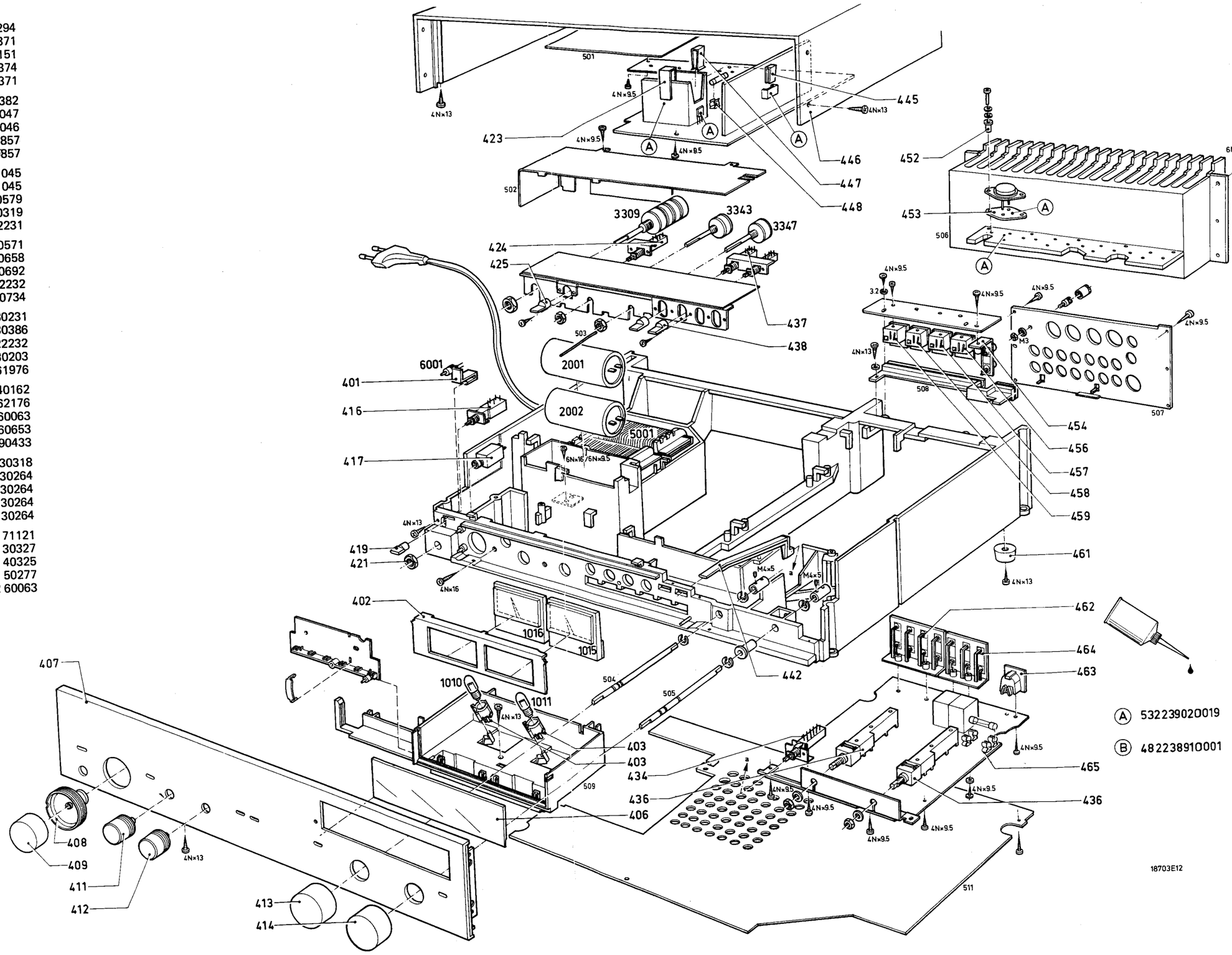
(NL)
Voor meer uitgebreide technische specificaties gelieve de commerciele dokumentatie te raadplegen.

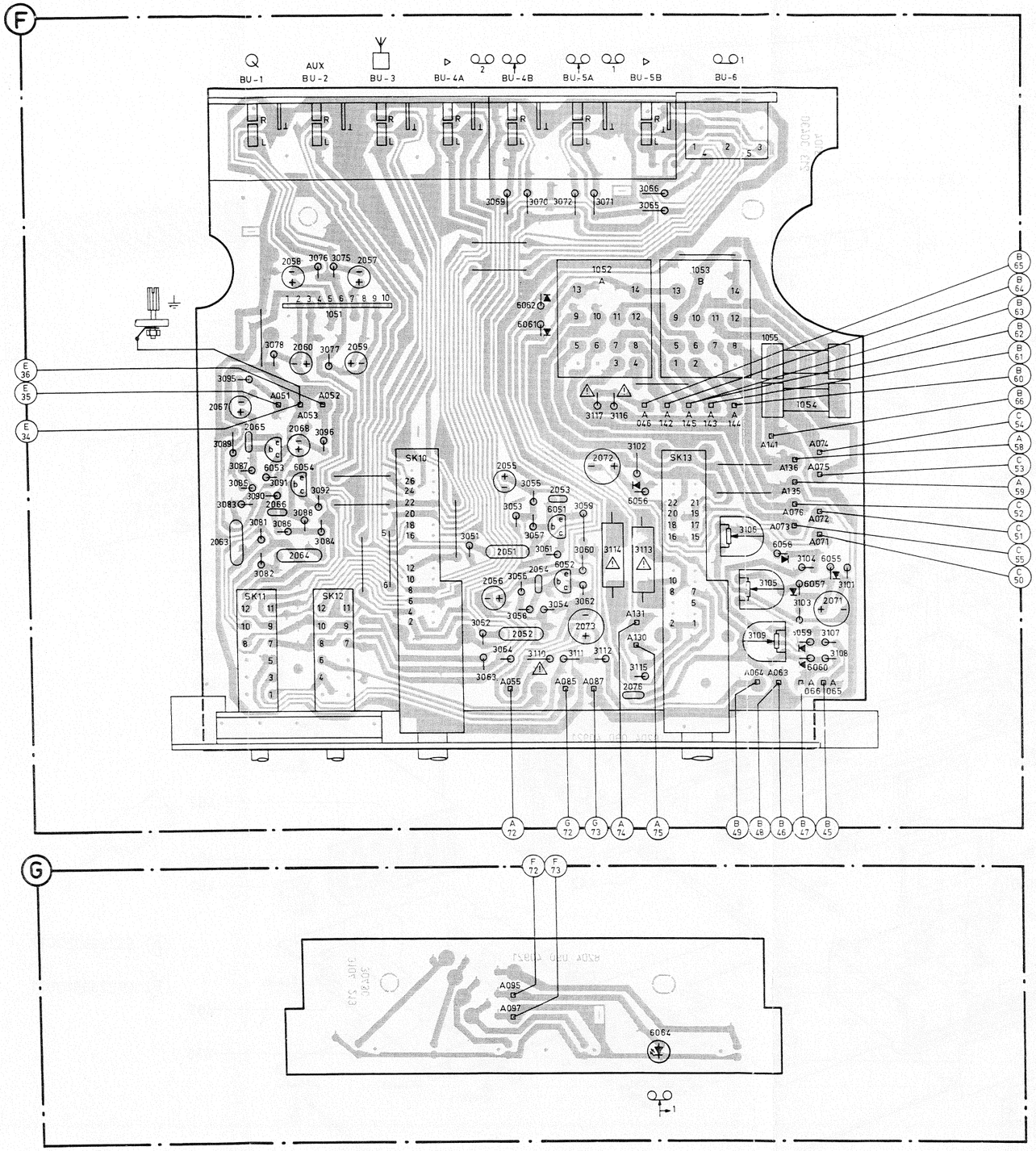
(D)
Für eine mehr detaillierte technische Spezifikation verweisen wir auf die kommerzielle Dokumentation.

(S)
För mera detaljerade tekniska data se kommersiel dokumentation.

| | | |

401	4822 256 90294
402	4822 466 70371
403	4822 255 10151
406	4822 466 70374
407	4822 426 50371
407/28	4822 426 50382
408	4822 413 51047
409	4822 413 51046
411	4822 413 40857
412	4822 413 40857
413	4822 413 51045
414	4822 413 51045
416	4822 276 10579
417	4822 267 30319
419	4822 410 22231
421	4822 505 10571
423	4822 492 40658
424	4822 276 10692
425	4822 410 22232
434	4822 276 10734
436	4822 273 80231
437	4822 277 30386
438	4822 410 22232
442	4822 410 30203
445	4822 492 61976
446	4822 426 40162
447	4822 492 62176
448	4822 492 60063
452	4822 532 60653
453	5322 466 90433
454	4822 267 30318
456	4822 267 30264
457	4822 267 30264
458	4822 267 30264
459	4822 267 30264
461	4822 462 71121
462	4822 267 30327
463	4822 267 40325
464	4822 267 50277
465	4822 492 60063

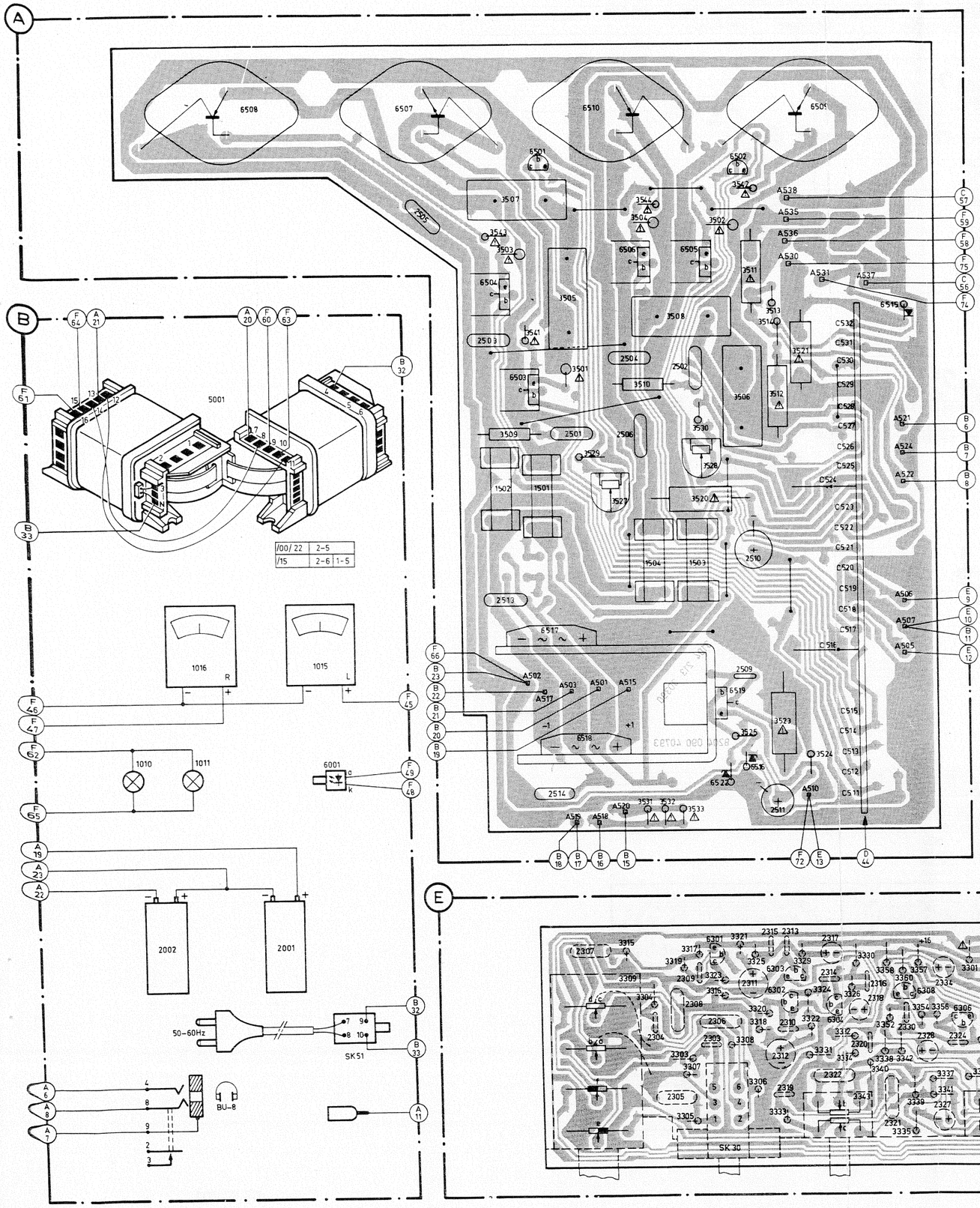




MISC	C	R	
BU-1 : BU-6			
		3069	3072
		3070	3071
		3065	3066
1052	2058	3075	3076
1053	2057		
6062			
1051			
6061			
	2059	3078	3077
	2060		
1055			
		3095	
1054	2067	3117	3116
	2065		
	2068	3096	
6053		3089	3102
SK10			
SK13	2072	3087	
6054	2055	3085	3091
		3055	
	2053	3090	3092
6056	2066		3083
6051		3088	3053
		3059	3081
		3086	3084
	2063	3057	3106
6058		3151	3061
6055	2064	3060	3114
6052	2051	3104	3113
		3082	3104
6057	2056	3056	3101
SK11		3105	3062
SK12	2071	3054	3101
			3103
6059	2073	3109	3107
	2052		
		3064	3110
		3111	3112
6060		3108	
		3063	3115
2076			
6063 : 6068			

18707D12

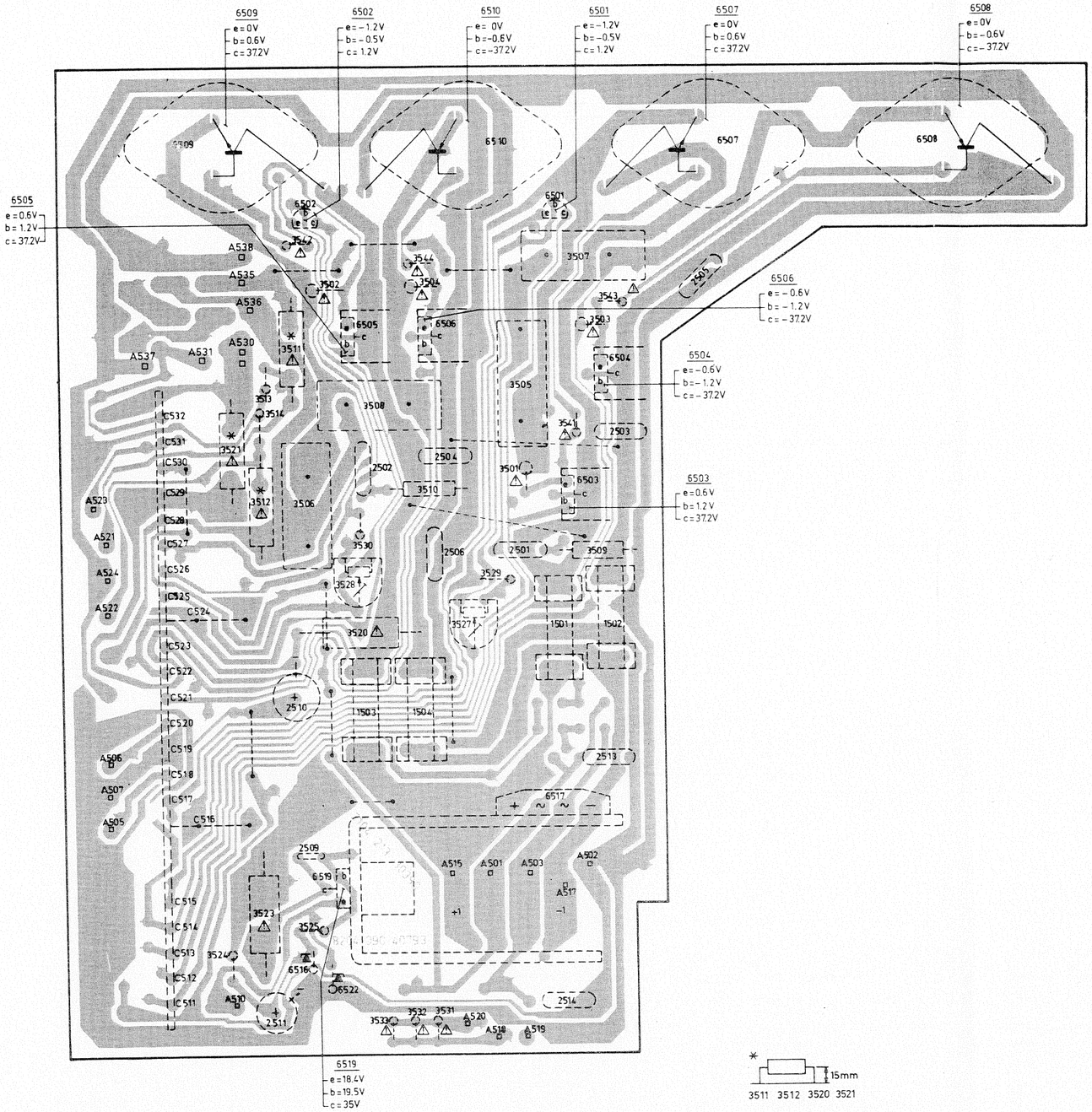
CS 68 061

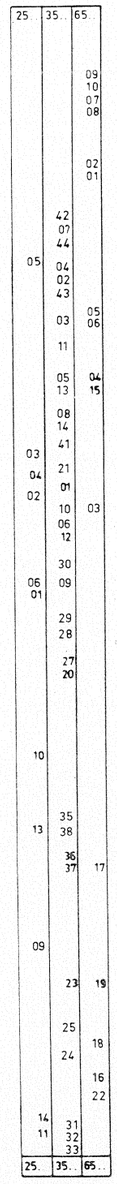


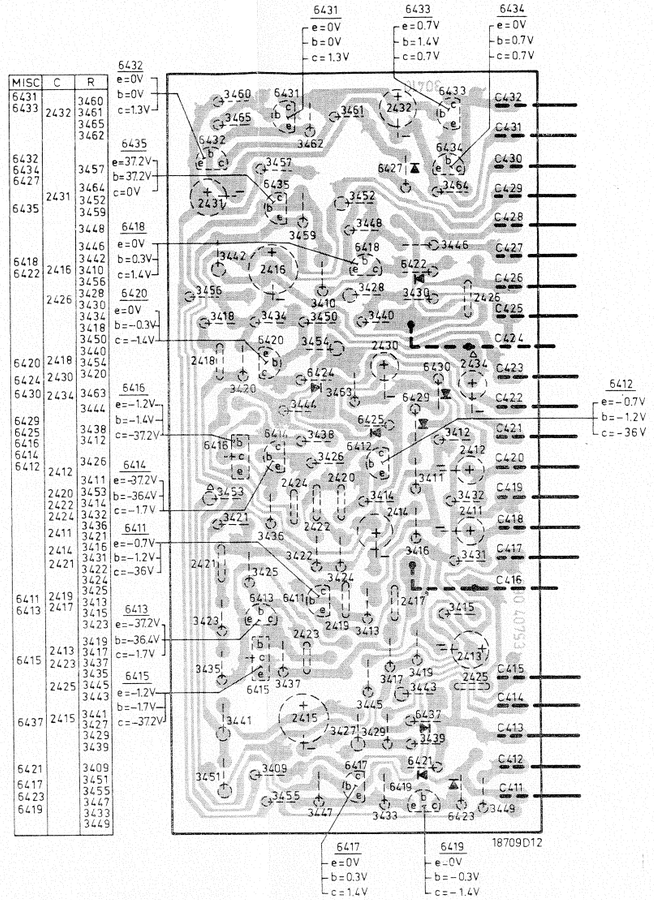
S 68 060

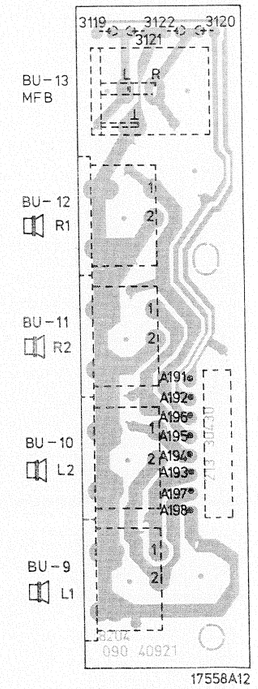
18706E12

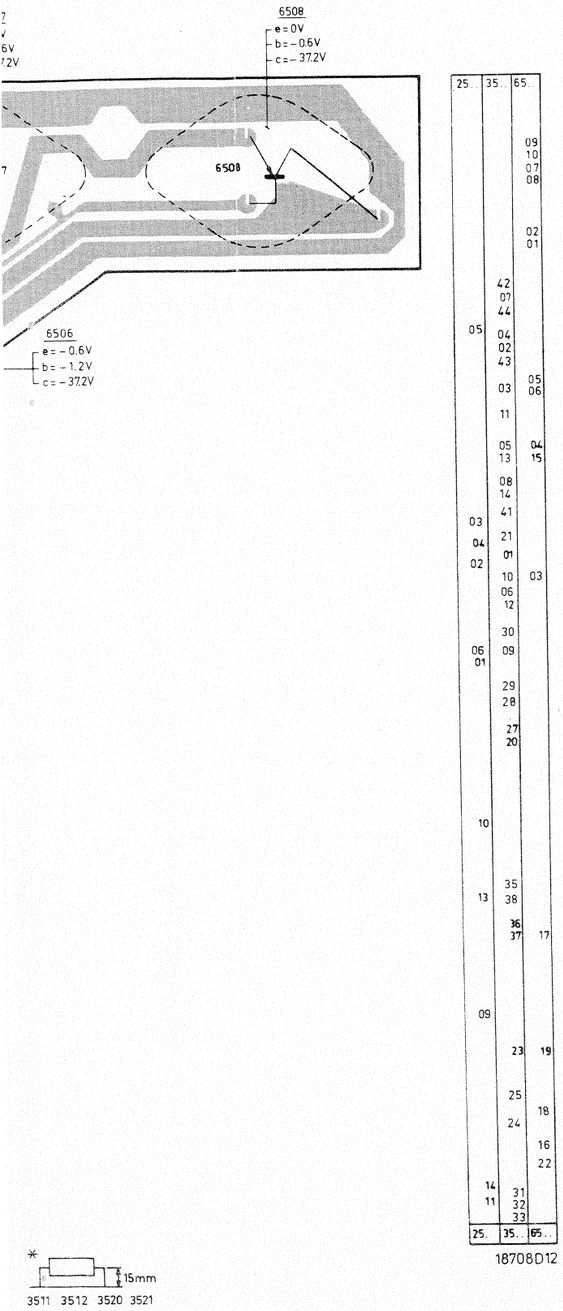
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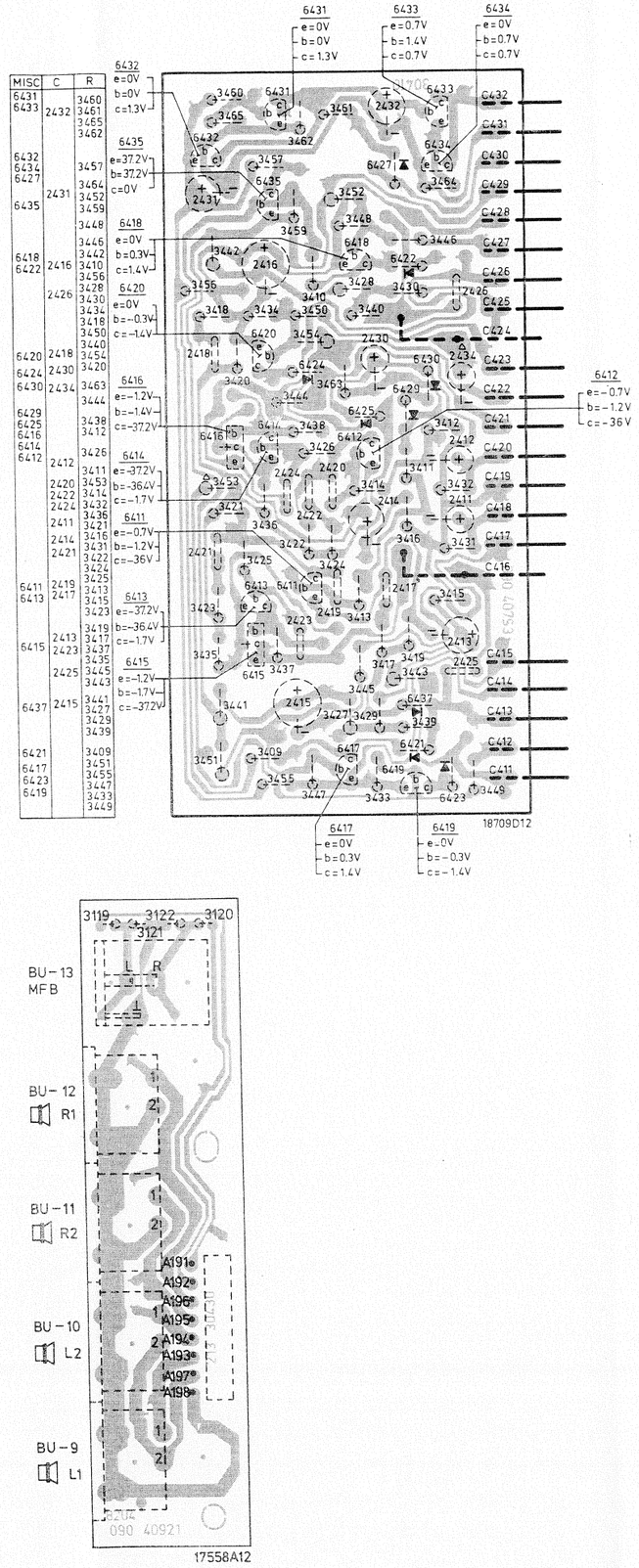

6509
e=0V
b=0.6V
c=37.2V
6502
e=-1.2V
b=-0.5V
c=1.2V
6510
e=0V
b=-0.6V
c=-37.2V
6501
e=-1.2V
b=-0.5V
c=1.2V
6507
e=0V
b=0.6V
c=37.2V
6508
e=0V
b=-0.6V
c=-37.2V
6505
e=0.6V
b=1.2V
c=37.2V
6506
e=-0.6V
b=-1.2V
c=-37.2V
6504
e=-0.6V
b=-1.2V
c=-37.2V
6503
e=0.6V
b=1.2V
c=37.2V
6519
e=18.4V
b=19.5V
c=35V
6509
6502
6510
6501
6507
6508
6505
6506
6504
6503
6519
A538
A535
A536
A537
A531
A530
A523
A521
A524
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A501
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A511
A518
A519
A520
C532
C531
C530
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18708D12


MISC
C
R
6431
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6418
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6425
6416
6414
6412
6411
6413
6415
6437
6421
6417
6423
6419
6431
e=0V
b=0V
c=1.3V
6433
e=0.7V
b=1.4V
c=0.7V
6434
e=0V
b=0.7V
c=0.7V
6432
e=0V
b=0V
c=1.3V
6435
e=37.2V
b=37.2V
c=0V
6418
e=0V
b=0.3V
c=1.4V
6420
e=0V
b=-0.3V
c=-1.4V
6416
e=-1.2V
b=-1.4V
c=-37.2V
6414
e=-37.2V
b=-36.4V
c=-1.7V
6411
e=-0.7V
b=-1.2V
c=-36V
6413
e=-37.2V
b=-36.4V
c=-1.7V
6415
e=-1.2V
b=-1.7V
c=-37.2V
6412
e=-0.7V
b=-1.2V
c=-36V
6417
e=0V
b=0.3V
c=1.4V
6419
e=-0V
b=-0.3V
c=-1.4V
18709D12


3119
3122
3120
3121
BU-13
MFB
BU-12
R1
BU-11
R2
BU-10
L2
BU-9
L1
A191
A192
A196
A195
A194
A193
A197
A198
17558A12





1 kHz (< 250 mV)	BU-3	BU-9 (L) (BU-12) (R) 2,31 V	3105 (3106)
1 kHz (< 250 mV)	BU-3	BU-9 (L) BU-12 (R) 22 V	3109

(GB)

Adjustment output amplifier

Direct current adjustment — Left (Right).
With the aid of R3527 (3523) adjust the quiescent current through the output transistors to 50 mA ± 5 %.
To be measured with a non-earthed mV-meter connected across the resistors 3505, 3507 (3506, 3508).
The deflection shall then be 24 mV ± 5 %.

Inspection DC protection

- Connect a resistor of 220 kΩ between the negative pole of C2411 and point +1 of the power supply. The relay shall then be released.
- Connect a resistor of 180 kΩ between the negative pole of C2414 and point −1 of the power supply. The relay shall then be released.

(F)

Réglage de l'amplificateur de sortie

Ajustage courant continu — gauche (droit).
Par action sur R3527 (3523) régler le courant de repos à travers les transistors de sortie pour avoir 50 mA ± 5 %.
A mesurer à l'aide d'un mV-mètre isolé de la terre, connecté aux bornes des résistances 3505, 3507 (3506, 3508).
La déviation doit être alors de 24 mV ± 5 %.

Contrôle de la protection contre le courant continu

- Connecter une résistance de 220 kΩ entre le pôle négatif de C2411 et le point +1 de l'alimentation. Ceci fait, le relais doit se décoller.
- Connecter une résistance de 180 kΩ entre le pôle négatif de C2412 et le point −1 de l'alimentation. Ceci fait, le relais doit se décoller.

(I)

Regolazione dell'amplificatore d'uscita

Regolazione della corrente di riposo canali sinistro (destro).
Per mezzo di R3527 (3523) regolare la corrente di riposo attraverso i transistor d'uscita a 50 mA ± 5 %.
Questa misura deve essere fatta con il mVoltmetro, senza il collegamento alla presa di terra, ai capi delle resistenze 3505, 3507 (3507, 3508).
La variazione può quindi essere di 24 mV ± 5 %.

Controllo del circuito di protezione in DC

- Collegare una resistenza di 220 kΩ tra il polo negativo di C2411 e il punto +1 dell'alimentazione. il relè sarà quindi sganciato.
- Collegare una resistenza di 180 kΩ tra il polo negativo di C2412 e il punto −1 dell'alimentazione. Il relè sarà quindi sganciato.

(NL)

Afregelen eindversterker

Gelijkstroominstelling — L(R).
De ruststroom door de eindtransistoren moet ingesteld worden met R3527 (3523) op 50 mA ± 5 % te meten met een niet geaarde mV-meter aangesloten over de weerstanden 3505, 3507 (3506, 3508).
De uitslag moet dan 24 mV ± 5 % zijn.

Controle DC beveiliging

- Sluit een weerstand van 220 kΩ aan tussen de — (min pool) van C2411 en de +1 voeding. Het relais moet dan afvallen.
- Sluit een weerstand van 180 kΩ aan tussen de — van C2412 den de −1 voeding. Het relais moet dan afvallen.

(D)

Abgleich des Endverstärkers

Gleichstromeinstellung — L(R).
Der Ruhestrom durch die Endtransistoren soll mit R3527 (3523) auf 50 mA ± 5 % eingestellt werden; zu messen mit einem nicht-geerdeten mV-Meter, über die Widerstände 3505 und 3507 (3506 und 3508) angeschlossen.
Der Ausschlag soll dann 24 mV ± 5 % sein.

Kontrolle der Gleichspannungssicherung

- Einen Widerstand van 220 kΩ zwischen Minusleiter von C2411 und +1-Stromversorgung anschliessen. Das Relais soll dann abfallen.
- Einen Widerstand von 180 kΩ zwischen Minusleiter von C2412 und −1 Stromversorgung anschliessen. Das Relais soll dann abfallen.

(S)

Inställning av slutsteg

Ställ in viloströmmen för vänster (höger) kanal med hjälp av R3527 (3523) så att den blir 50 mA ± 5 % genom sluttransistorerna. Mät med en ickejordad mV-meter över resistorerna 3505, 3507 (3506, 3508). Spänningen skall vara 24 mV ± 5 %.

Kontroll av DC-skydd

- Anslut en resistor på 220 kΩ mellan den negativa polen på C2411 och +1 på nätspänningsaggregatet. Härvid skall reläet lösa ut.
- Anslut en resistor på 180 kΩ mellan den negativa polen på C2412 och −1 på nätspänningsaggregatet. Härvid skall reläet lösa ut.

-TS-

6051-6054	BC559B	4822 130 44358
6301,6302	BC559	4822 130 40963
6303,6304	BC548B	4822 130 40937
6305,6306	BC548	4822 130 40938
6307,6308	BC558	4822 130 40941
6411,6412	BC557B	4822 130 44568
6413,14,17,18	BC546B	4822 130 41067
6415,6416	BD138	4822 130 40665
6419,6420	BC558	4822 130 40941
6431,6432	BC548	4822 130 40938
6433	BC548C	4822 130 44196
6434	BC337	4822 130 40855
6435	BC557	4822 130 44256
6501-6402	BC548B	4822 130 40937
6403-6506	BD137/138	4822 130 40704
6507,6509	BD313	4822 130 41154
6508,6510	BD314	4822 130 41155
6519	BD677	5322 209 85451

-D-

6001		4822 130 31137
6055,6056 6061,6062	BAW62	4822 130 30613
6057-6060	BA315	4822 130 30843
6063-6068	GL-2AR-1	4822 130 31137
6421-6430	BAW62	4822 130 30613
6515	BAW62	4822 130 30613
6516	BZX79/C20	5322 130 34499
6517,6518	BY225/100	4822 130 30917
6522	BZX79/C22	4822 130 34441

5001 — 4822 146 80086

-R-

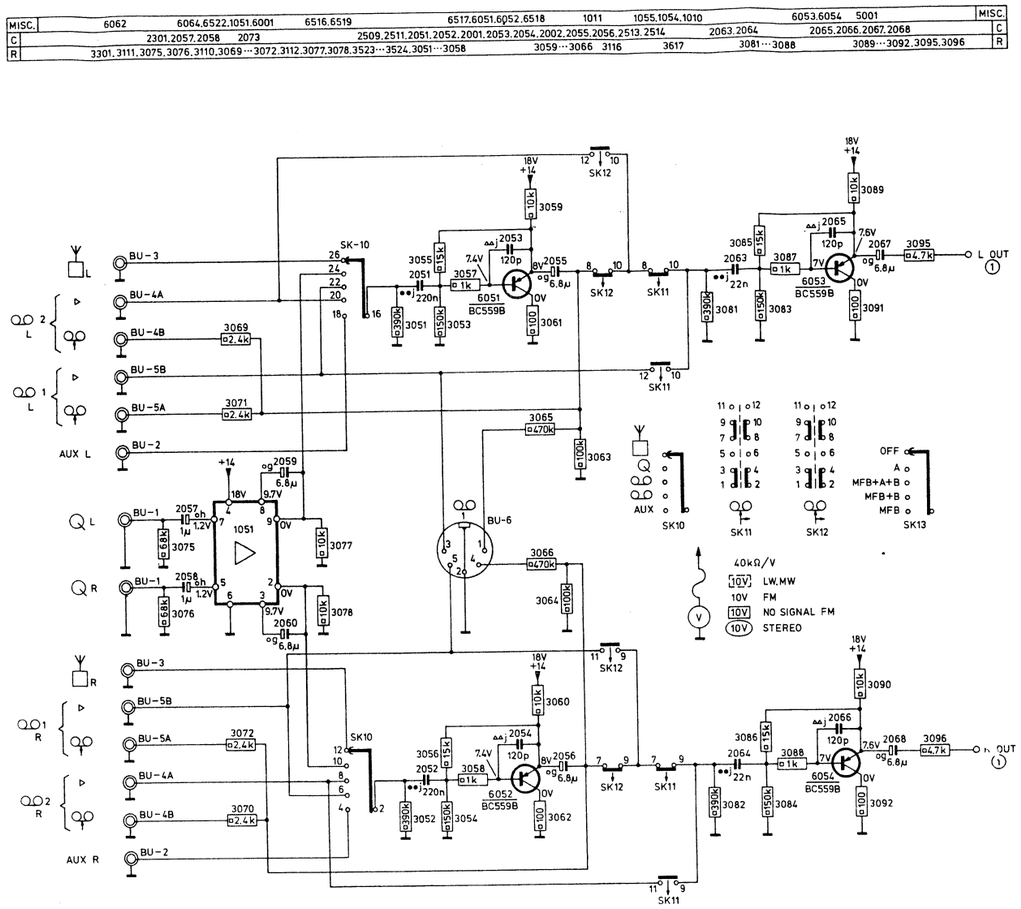
3105,3106	10K	4822 100 10035
3109	470 Ω	4822 100 10038
3110	Safety 56 Ω	4822 111 30412
3116,3117	Safety 1,6 Ω	4822 111 30471
3301	Safety 56 Ω	4822 111 30412
3009	2x100+22K	4822 102 10145
3337,3338	Metal res. 330K-2%	4822 116 51207
3339,3340	Metal res. 47K-2%	5322 116 54671
3343,3347	2x47K	4822 102 30313
3435,3436	Safety 10 Ω	4822 111 30405
3443,3444	Safety 56 Ω	4822 111 30029
3501-3504	Safety 150 Ω	4822 111 30156
3505-3508	W.W.-3W-0.24 Ω	4822 115 40216
3511-3512	W.W.-4W-330 Ω	4822 110 43098
3521	Safety 130 Ω	4822 111 50405
3523	Safety 22E	4822 111 50346
3527-3528	1K	4822 100 10037
3532-3533	Safety 1 Ω	4822 111 30215
3541-3544	Safety 5.6 Ω	4822 111 30435

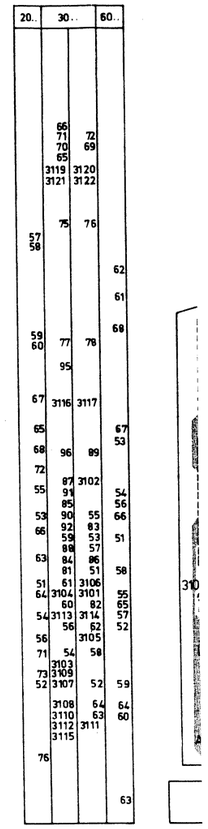
-C-

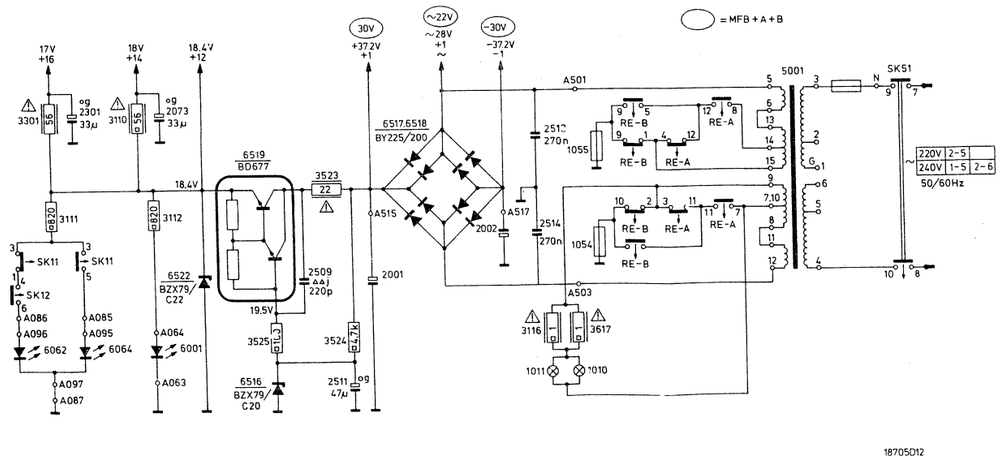
2001-2002	6800 uF - 40 V	4822 124 70315
2071,2072	22 uF - 40 V	4822 124 40223
2076	22 nF	4822 122 30103
2321,2311	82 nF	4822 121 41158
2335,2323	10 nF	4822 121 41134
2419-2420	56 pF - 2%	4822 122 31074
2423-2424	8.2 pF - 2%	4822 122 31052
2501-2502	100 n - 100 V	4822 121 40334
2503-2506	250 V - 47 n	4822 121 40239
2512	100 n - 250 V	4822 121 40518
2513-2514	470 n - 100 V	4822 121 40438

-Miscellaneous-

1010-1011	6,3 V - 250 mA	4822 134 40007
1015		4822 347 10244
1016		4822 347 10245
1051		4822 218 10124
1054,1055	6,3 AT	4822 253 30031
1501-1504	2 AT	4822 253 30025
1052-1053	Relay	4822 280 70166







GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

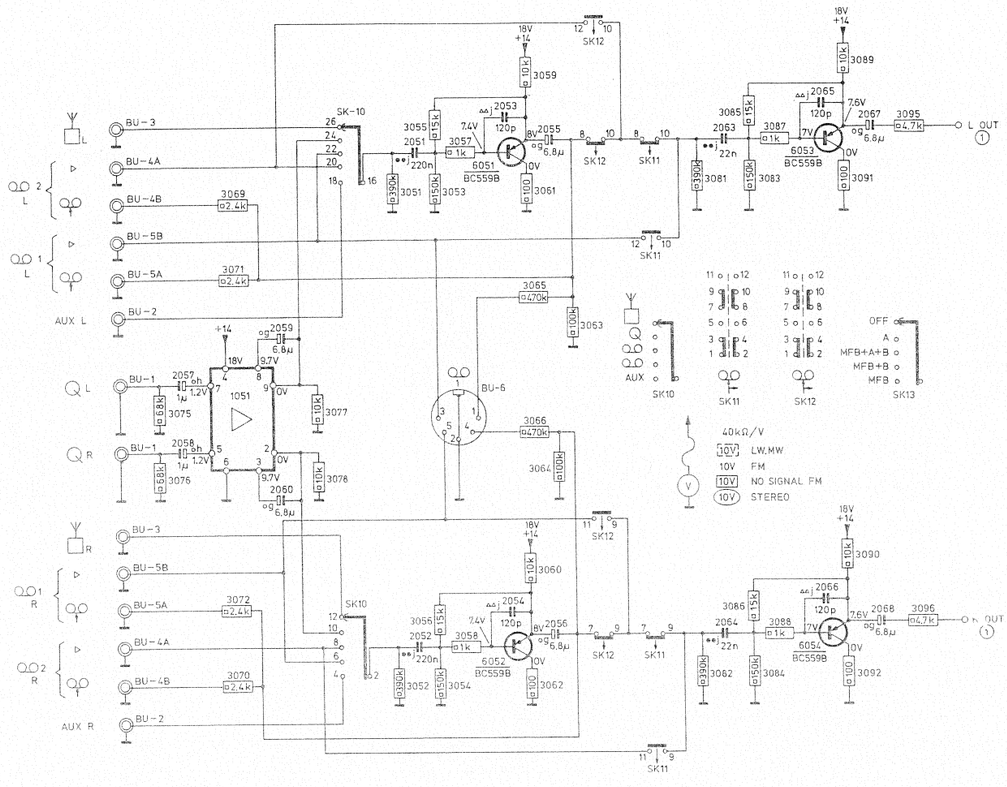
I

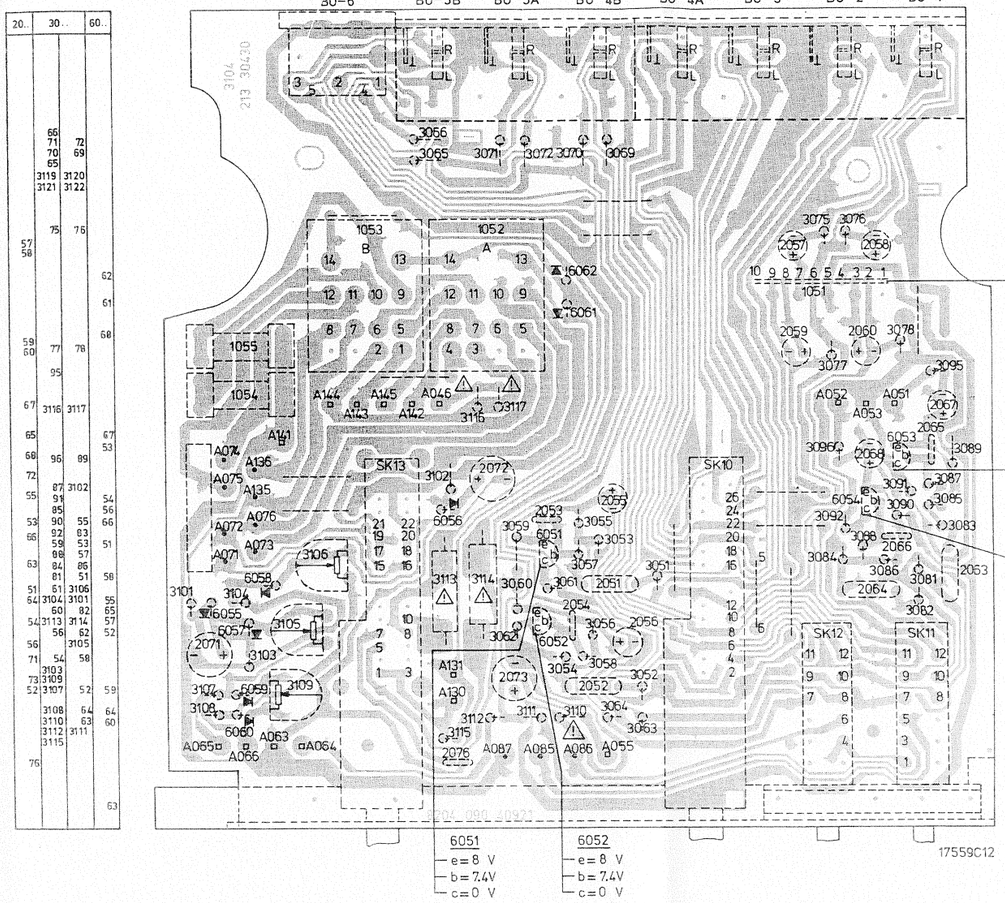
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

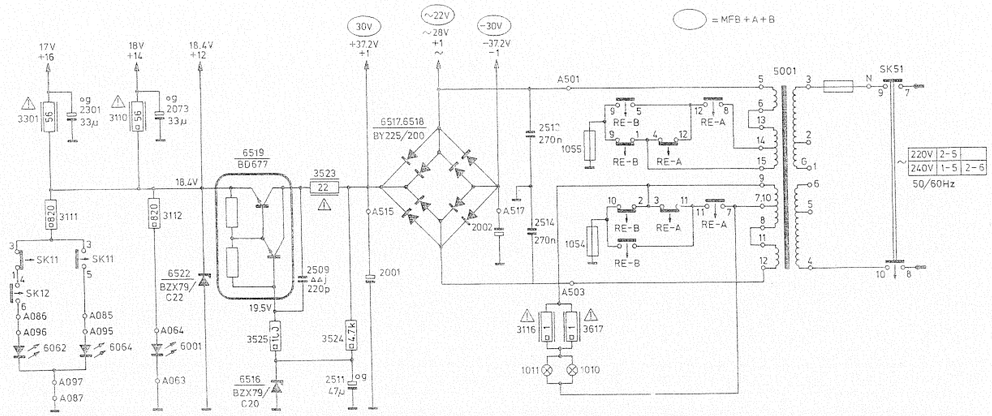
S

Säkerhetsbestämmelserna kräver att varje reparation skall utföras korrekt med hänsyn till ursprunglig placering av komponenter, ledningar etc. och med användning av föreskrivna reservdelar.

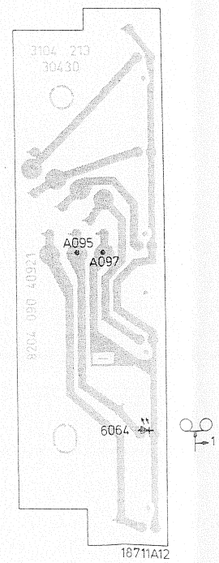
MISC.												MISC.
C	6062	6064,6522,1051,6001	6516,6519	6517,6051,6052,6518	1011	1055,1054,1010	6053,6054	5001				C
C	2301,2057,2058	2073	2509,2511,2051,2052,2001,2053,2054,2002,2055,2056,2513,2514	2063,2064	2065,2066,2067,2068							C
R	3301,3111,3075,3076,3110,3069···3072,3112,3077,3078,3523···3524,3051···3058	3059···3066	3116	3617	3081···3088	3089···3092,3095,3096						R







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